(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **57045927 A**

(43) Date of publication of application: **16.03.82**

(51) Int. Cl **H01L 21/302**

(21) Application number: **55121564**

(22) Date of filing: **02.09.80**

(71) Applicant: **FUJITSU LTD**

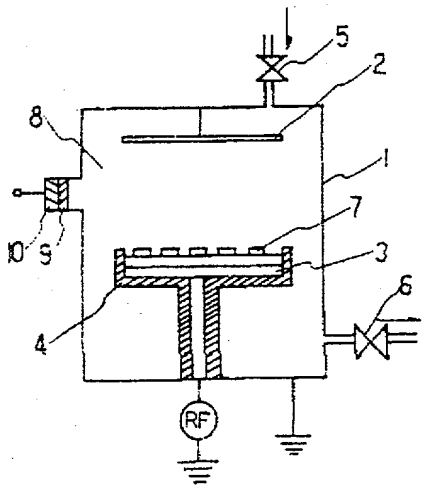
(72) Inventor: **INOUE MINORU**

(54) VACUUM LEAKAGE DETECTOR FOR DRY ETCHING VACUUM CONTAINER

(57) Abstract:

PURPOSE: To accurately and simply detect the vacuum leakage of a container by providing a window for passing a light to a vacuum container used for dry etching and a photodetector faced with the window and detecting the plasma light of N_2 or O_2 produced when its airtightness becomes improper.

CONSTITUTION: Opposite electrode 2 to become one electrode for generating a plasma is arranged in a vacuum container 1 forming a plasma etching device in such a manner that the potential of the electrode 2 is set to the same potential of the container 1. A water-cooled electrode 3 is arranged via a dielectric unit 4 for shielding from the container 1 oppositely to the electrode 2, a wafer 7 for a semiconductor device is placed as a member to be etched thereon, is energized by a high frequency power source, and the internal gas is converted to the plasma. In this configuration, a window 8 is opened at one side wall of the container 1, and a photodetector 10, e.g., a photodiode or the like is mounted via a filter 9 passing the characteristic wavelength of N_2, O_2 thereat. In this manner, the plasma light of N_2, O_2 always produced when the airtightness of the container 1 becomes improper is selectively detected, thereby effectively detecting the leakage.



(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **62052714 A**

(43) Date of publication of application: **07.03.87**

(51) Int. Cl **G11B 5/66**
G11B 5/704
G11B 5/72

(21) Application number: **60191579**

(22) Date of filing: **30.08.85**

(71) Applicant: **OLYMPUS OPTICAL CO LTD**
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(54) **MAGNETIC RECORDING MEDIUM**

(57) Abstract:

PURPOSE: To form a magnetic recording medium having excellent running stability and durability by forming a lubricative coating layer consisting of the cured matter of a specific fluoropolymer.

CONSTITUTION: The lubricative coating layer consisting of the cured matter of the fluoropolymer having a fluoroalkyl group and hydrolyzable functional group or silyl group having halogen atoms is provided on the front of a thin ferromagnetic film or the rear surface of a substrate after said thin film is provided as a magnetic layer on the substrate. The effect of a low friction characteristic and excellent corrosion resistance is developed by the fluoroalkyl group and the polymer is crosslinked and cured by the hydrolyzable functional group or silyl group having halogen atoms, by which the toughness, wear resistance and the adhesiveness to the magnetic layer, etc. are improved. A protective layer may be provided of this polymer alone or in conjunction with other surface treating agents.

(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **06196446 A**

(43) Date of publication of application: **15.07.94**

(51) Int. Cl **H01L 21/302**
C23C 16/50
C23F 4/00
H01L 21/205
H05H 1/46

(21) Application number: **04344666**

(22) Date of filing: **24.12.92**

(71) Applicant: **NEC CORP**

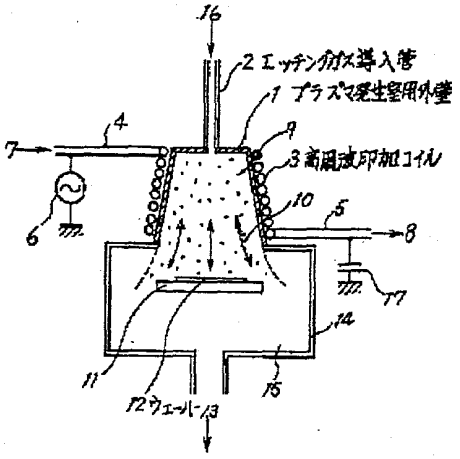
(72) Inventor: **KAKIMOTO YOSHIHIRO**

(54) **HIGH FREQUENCY MAGNETIC FIELD EXCITATION TREATMENT DEVICE**

(57) Abstract:

PURPOSE: To prevent the damage such as crystal dislocation and the like caused by plasma irradiation damage to the wafer surface when the thin film on the wafer is etched.

CONSTITUTION: The outer wall 1, which forms the outer shell of a plasma generating chamber 9, is formed in hollow conical shape, and high frequency coil 3 is wound in uniform density on the surface of conical circumferential surface of the outer wall 1. Material 12 to be etched is provided on the lower part of the plasma generating chamber 9. High frequency power is applied to a high frequency application coil 3, and a high frequency magnetic field 10 is generated by diverging and attenuating it toward the material 12 to be etched, and plasma etching is conducted by discharging plasma without any electrode.



(19) JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **07288196 A**

(43) Date of publication of application: **31.10.95**

(51) Int. Cl **H05H 1/46**
C23C 16/50
C23F 4/00
H01L 21/3065
H01L 21/31

(21) Application number: **06056237**

(22) Date of filing: **25.03.94**

(30) Priority: **22.02.94 JP 06 23993**

(71) Applicant: **TOKYO ELECTRON LTD**

(72) Inventor: **ISHII NOBUO**

(54) PLASMA GENERATING APPARATUS

(57) Abstract:

PURPOSE: To uniformalize the plasma density near the surface to be treated of a substrate by making the phase of each detected voltage high frequency signal have a prescribed phase difference produced by a phase adjusting part.

CONSTITUTION: High frequency signals sent out of an oscillation circuit 21a are sent in phase detectors 22a, 22b and the phase difference is detected. The output voltage of the detectors 22a, 22b are sent to loop filters 23a, 23b to which phase difference signals 22c, 22d is sent. The output voltage is controlled by the filters 23a, 23b to have phases set by the outputs of the phase difference signals and the output is sent to voltage controlled oscillators 24a, 24b whose oscillation frequency is variable by input voltage. The electric power of the outputs of the oscillators 24a, 24b is amplified by electric power amplifiers 25a, 25b and supplied to one ends of one round high frequency coils 16, 17 through matching circuits 26a, 26b. The outputs of the circuits 26a, 26b are connected with the detectors 22a, 22b. Consequently, the phase adjusting part can produce voltage signals of high frequency with a prescribed phase difference.